**The Control of the Cell Cycle**

**Descriptive Data –**Twenty 7th graders - 10 girls and 10 boys. Science - Genetics. Nineteen of the twenty have attended Immanuel Lutheran School since 1st grade, if not since preschool. One male student began attending Immanuel Lutheran School last year as a 6th grader. The overall composition of the class is white with one adopted student. Female student was adopted as a infant from an Asian country. All students have school access to computers and internet in the classroom in either the computer lab or laptops.

**Prior Requirements**  
Understanding the cell cycle of mitosis

**Learning Objectives**  
The student will be able to name the function of CDK and Cyclin in the cell  
The student will be able to tell what is the result if CDK and Cyclin don’t preform their function

**Assessment of Student Learning-**  
The student will have to successfully made it to the end of the game two times. The goal of the first time is to focus on taking the notes and filling in the correct process. The second time is to reaffirm the correct answers of the cell cycle. The student needs to show the teacher their two successful endings.  
The student will have the fill in the notes sheet completely and accurately.

**Rationale**  
Basic cell division happens in everyone’s body, every day, every hour, every second. Students need to have a basic understanding of this process, the job of CDK and Cyclin, and what happens if CDK and Cyclin don’t do their job and the process breaks down.

**Materials and Equipment**  
Computer access for every student.  
Short notes outline for the student to fill out during the game on paper or digitally.

**Procedure**  
1- After reviewing what the student have learned about cell division, Tell the students, “There are a few more details to add to this process, especially the job of CDK and Cyclin.”  
2 - Give each student the notes to fill in (paper or digital) while they are at: <http://www.nobelprize.org/educational/medicine/2001/index.html>  
3 - Instruct them to take notes as they go through the activity  
4 - Warn them that if they make too many mistakes the cell will die and they will have to start all over again, and that is OK. But this doesn’t count as one of their two times. The two times must end in sucessful duplication of the cell.  
5 - Teacher facilitates around to answer questions.

**Fill in notes**:

How does a cell know when another cell is needed?

What happens during the G1 phase?

What two things does CDK and Cyclin partners check for here?

What two things happens during S phase?

What three things does CDK and Cyclin partners check for?

What problem did your cell encounter? What happened next?

What happens during the first part of M phase?

What does CDK and cyclin partners check for during this phase?

What happens during the second part?

What is a mutation?

What is the important job that CDK and Cyclin do for the cell?

What can happen if they don't do their job?